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Conference Abstract

# Pyrite Rehousing – Recent Case Studies at Two Australian Museums

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## Abstract

Two major collecting institutions in Australia, the Australian Museum (Sydney) and Museums Victoria (Melbourne), are currently undertaking large-scale anoxic rehousing projects in their collections to control conservation issues caused by pyrite oxidation. This paper will highlight the successes and challenges of the rehousing projects at both institutions, which have collaborated on developing strategies to mitigate loss to their collections.

In 2017, Museums Victoria Conservation undertook a survey with an Oxybaby M+ Gas Analyser to assess the oxygen levels in all their existing anoxic microclimates before launching a program to replace failed microclimates and expand the number of specimens housed in anoxic storage. This project included a literature review of current conservation materials and techniques associated with anoxic storage, and informed the selection of the RP System oxygen scavenger and Escal Neo barrier film from Mitsubishi Gas Chemical Company as the best-practice products to use for this application.

Conservation at the Australian Museum in Sydney was notified of wide-scale pyrite decay in the Palaeontology and Mineral collections. It was noted that many of the old high-barrier film enclosures, done more than ten years ago, were showing signs of failing. None of the Palaeontology specimens had ever been placed in microclimates.

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After consultation with Museums Victoria and Collection staff, a similar pathway used by Museums Victoria was adopted. Because of the scale of the rehousing project, standardized custom boxes were made, making the construction of hundreds of boxes easier. It is hoped that new products, like the tube-style Escal film, will extend the life of this rehousing project. Enclosures are being tested at the Australian Museum with a digital oxygen meter.

Pyrite rehousing projects highlight the loss of Collection materials and data brought about by the inherent properties of some specimens. The steps undertaken to mitigate or reduce the levels of corrosion are linked to the preservation of both the specimens and the data kept with them (paper labels).

These projects benefited from the collaboration of Natural Sciences conservators in Australia with Geosciences collections staff. Natural Science is a relatively recent specialization for the Australian conservation profession and it is important to build resources and capacity for conservators to care for these collections. This applied knowledge has already been passed on to other regions in Australia.

## Keywords

Pyrite, conservation, microclimates, storage

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